

- Thank you very much for procuring this constant current/PWM light control power supply OPPCW-910M2.
- Read this instruction manual carefully before using.
- Keep this instruction manual at hand for proper use after reading.
- This product is a power supply that controls on/off and adjusts the brightness of industrial LED lighting.
- This device cannot be used as safety device to protect human body.
- The warranty period of this product is two years, starting from the delivery date.
- Optex FA will repair or replace the product free of charge if it should fail to function within the specified warranty period. However, any fault attributable to natural disasters or any other similar disasters or undue alteration or repair will be excluded from the scope of the warranty.



Front Panel		Can be set independently for LAMP1/LAMP2.
READY indicator	ON when the lamp is ready to light up. OFF when the overcurrent protection is functioning or the output level of constant current is significantly low and the voltage output is approximately 1 V or less.	
COARSE switch	Switch for coarse adjustment of the output level. A - F corresponds to 10 - 15 and COARSE value x 16 + FINE value is the output level (0 - 255).	
FINE switch	Switch for fine adjustment of the output level. A - F corresponds to 10 - 15 and COARSE value x 16 + FINE value is the output level (0 - 255).	
RANGE switch	Switches the current value between PWM mode and constant current mode. 0: Reserved (Output Off) 1 - 7: Constant current mode (Maximum current 100 - 700 mA) 8: Reserved (Output Off) 9: 12 V, PWM mode "You can't switch the mode between "Constant current mode" and "PWM mode" while the power is ON. Please make sure the power is OFF when you switch the mode. Then, the mode will be effectively switched in 2 seconds or more before the power is turned on. You can change the range between "Range 1" and "Range 7" while the power is ON.	
INT/EXT switch	Turning the switch to the INT side at the time of light control with the external input forcibly enables light control with the COARSE and FINE switches on the front panel. The switch is normally set to the EXT side.	
POWER switch	This is the main power switch. Main power is turned ON on the I side and OFF on the O side.	

LAMP1 - 12V PWM Output Connector		
1	LAMPV1+	Positive (+) side of the 12 V PWM output 1. Output is off in the constant current mode.
2	LAMPV1-	Negative (-) side of the 12 V PWM output 1. Output is off in the constant current mode.

LAMP2 - 12V PWM Output Connector		
1	LAMPV2+	Positive (+) side of the 12 V PWM output 2. Output is off in the constant current mode.
2	LAMPV2-	Negative (-) side of the 12 V PWM output 2. Output is off in the constant current mode.

LAMP1 - CONSTANT CURRENT Output Connector		
1	N.C.	Not connected to the internal circuit.
2	LAMP1C-	Negative (-) side of the constant current output 1. Output is off in the PWM mode.
3	LAMP1C+	Positive (+) side of the constant current output 1. Output is off in the PWM mode.

LAMP2 - CONSTANT CURRENT Output Connector		
1	N.C.	Not connected to the internal circuit.
2	LAMP2C-	Negative (-) side of the constant current output 2. Output is off in the PWM mode.
3	LAMP2C+	Positive (+) side of the constant current output 2. Output is off in the PWM mode.

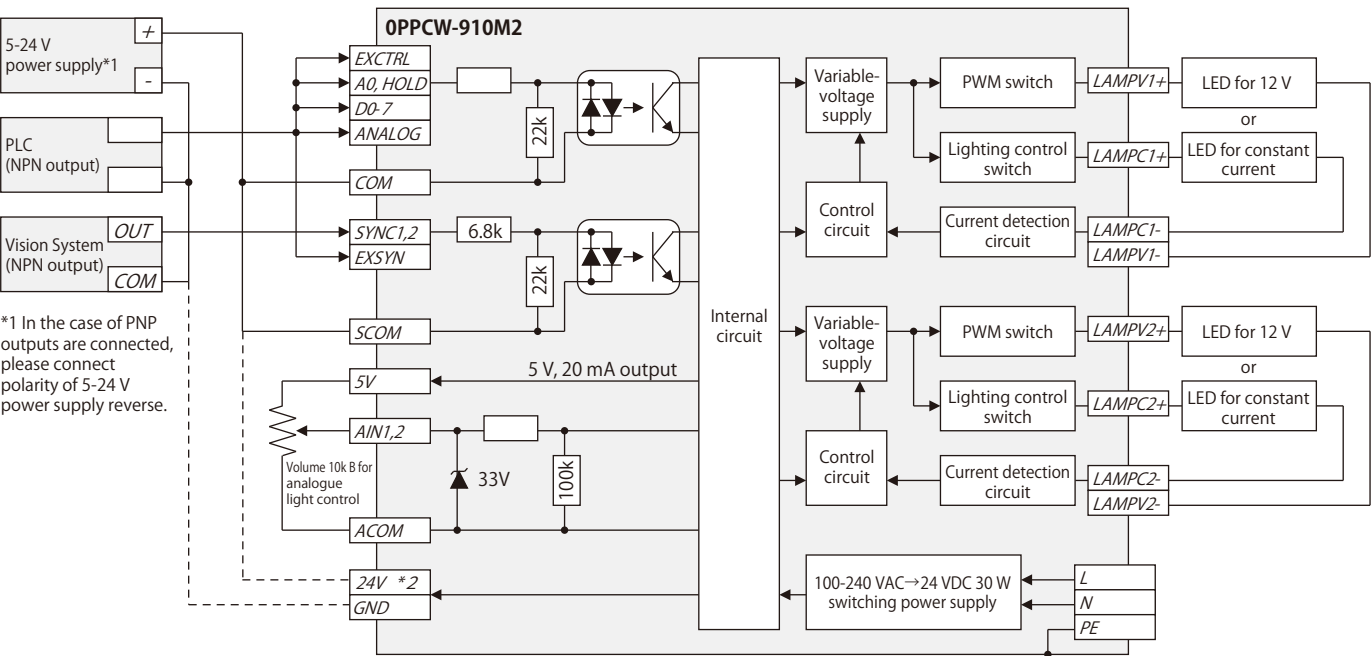
1. Safety precautions

- (1) Make sure to ground the earth terminal (PE). Otherwise accident due to electrical shock may occur.
- (2) Power OFF and stop using the device immediately in the case that you recognized smoke or abnormal odor from this device.
- (3) Do not disassemble, repair, or convert the product. Failure to do this may cause injury, fire or electric shock.
- (4) Be careful not let any dusts and pieces of metal get into the vent hole.
- (5) Use the LED lighting equipment of constant current type with the setting in accordance with the rated current.
- (6) If either of LAMP1 or LAMP2 is in the constant current mode, it emits dummy light only once when this device is powered on.
- (7) Make sure to connect LED light before powering on this device in the constant current mode. If this device connected to the LED light after it is powered on without load, an overcurrent flows into the LED, which results in shorter service life.
- (8) Connect the outputs (LAMPV1+, LAMPV1-, etc.) only to LED lighting equipment. Do not connect such output to any other circuit or potential.
- (9) Output cannot be connected with other LED controller in series nor in parallel.
- (10) Output level set with the external digital input becomes 0 (zero) when this device is powered off.

2. Specifications

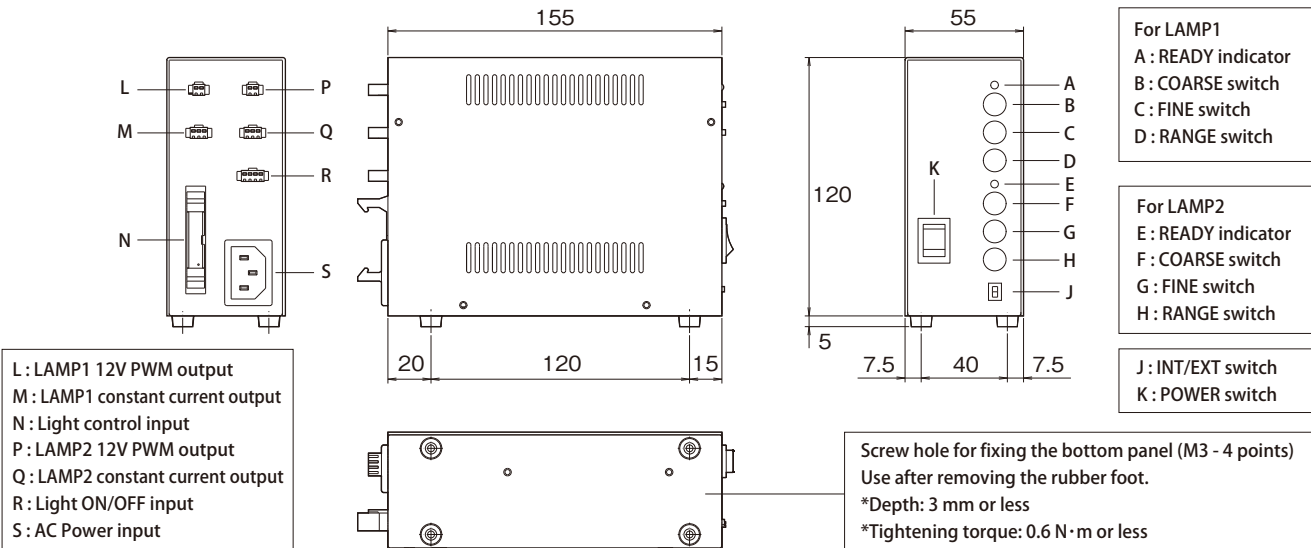
Part Number	OPPCW-910M2
Supply Voltage	100-240 VAC $\pm 10\%$, 50/60 Hz
Power Consumption	Max. 0.43 A (at 100 VAC)
Number of Output Points	2 points (independent)
Brightness Control	PWM mode: 78.125 kHz, PWM control, 256 levels Constant current mode: Maximum current range switching: 7 ranges, 256 levels
Output Voltage	PWM mode : 12 V $\pm 5\%$ p-p (78.125 kHz) Constant current mode : 1.5 - 17 V
Output Current	PWM mode : 0 - 2.2 A / 2ch in total Constant current mode : 0.4 mA - 700 mA $\pm 5\%$ and ± 3 mA
Light Control Input	Front panel / external digital input / external analogue input
Light Control Resolution	0 - 255 (256 levels)
Digital Input	OFF: ± 1.2 V or less; ON: ± 5 V or more applied (max ± 26.4 V); Input resistance: 6.8 k Ω , insulated
Analogue Input	0 - 5 V (max $+30$ V, -0.5 V); Input resistance: 220 k Ω , non-insulated
5 V Output Current	Max. 20 mA
Response Time (typ.)	SYNC: OFF $\rightarrow$ ON PWM mode; Input 24 V: 7 μ s; Input 12 V: 14 μ s; Input 5 V: 135 μ s (In PWM mode with fluctuation of up to 12.8 μ s depending on pulse period) Constant current mode: 1ms(common for each input voltage) SYNC: ON $\rightarrow$ OFF 120 μ s (common for each input voltage) Analogue light control input: Approximately 2ms Other digital control input: Approximately 2.5 ms
Operating environment	Indoor use, Maximum altitude: 2,000m
Ambient Temp./humid.	-10 - 50°C, 35 - 85%RH (no condensation)
Storage Temp./Humid.	-20 - 70°C, 25 - 95%RH (no condensation)
Transient over-voltage	Category II
Pollution degree	Pollution degree 2
Voltage Resistance	Between power input - chassis 1500 VAC (for 1 min.) Between output - chassis 500 VAC (for 1 min.)
Vibration Resistance	10 - 55 Hz, 1.5 mm of complex amplitude, in directions of X, Y, and Z, for 2 hours
Applicable regulations	EMC (2014/30/EU) / Safety (2014/35/EU) / RoHS (2011/65/EU, MIIT Order No.32)
Applicable standards	EN 61326-1:2013, EN 61010-1:2010
Material	Galvanized sheet iron (SECC)
Weight	Approximately 1030 g excluding accessories
Accessories	Power cable with A type plug (2P+E) / 125V rating * For the use of the product with voltage exceeds 125V, please prepare the power cable with the plug which fits to the outlet and stands the voltage accordingly.

3. Connection with external equipment

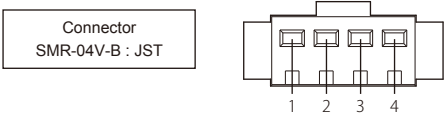


*2
You can use 24V output of "EXT CTRL - External Brightness Control Input Connector" instead of external power supply.
Please connect 24V and GND as dotted line in this case. In the case of PNP outputs are connected, please connect reverse.

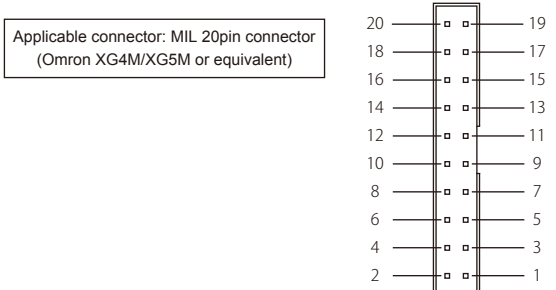
4. Dimensions



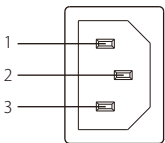
EXT ON/OFF External Lighting Control Connector		
1	SYNC1	Input for external lighting control of LAMP1; turned ON when voltage is applied between SYNC1 - SCOM. (Only when the EXSYN input is ON)
2	SYNC2	External lighting control input for LAMP2; Turned ON when voltage is applied between SYNC2 - SCOM. (Only when the EXSYN input is ON)
3	EXSYN	Applying voltage between EXSYN - SCOM and turning it ON switch LAMP1 and LAMP2 into the external lighting control mode.
4	SCOM	Common terminal for external lighting control input (nonpolar)



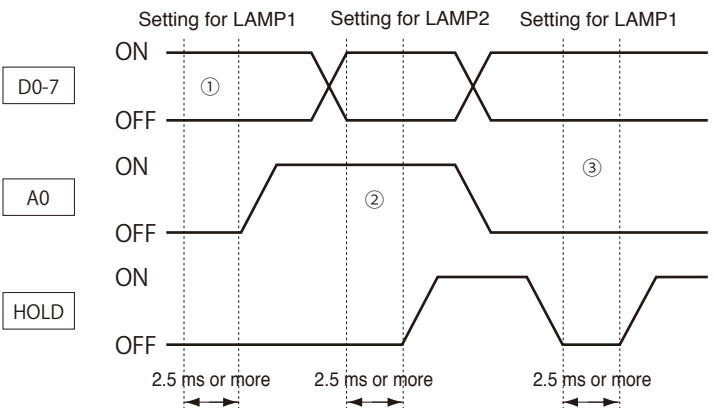
EXT CTRL - External Brightness Control Connector		
1	COM	Common terminal for digital input (nonpolar)
2	EXCTRL	Turned ON when brightness is adjusted with the external digital input (A0, WR, D0-7). (ON when voltage is applied between EXCTRL - COM.)
3	A0	Specifies output for setting brightness. OFF: LAMP1, ON: LAMP2
4	HOLD	While the input is ON, even if any of D0 - D7 is changed, the value is not reflected.
5	D7	Bit 7 (MSB) for input for setting brightness
6	D6	Bit 6 for input for setting brightness
7	D5	Bit 5 for input for setting brightness
8	D4	Bit 4 for input for setting brightness
9	D3	Bit 3 for input for setting brightness
10	D2	Bit 2 for input for setting brightness
11	D1	Bit 1 for input for setting brightness
12	D0	Bit 0 (LSB) for input for setting brightness
13	ANALOG	Turned ON when brightness is adjusted with the analogue input (AIN1, AIN2). * To be used between AIN1/AIN2 and the common terminal for digital input.
14	GND	Ground
15	24V	24V output. You can use this output instead of external power supply to provide DC power for digital brightness control input. Don't use this output for other purpose.
16	24V	
17	AIN1	Analogue input for brightness adjustment for LAMP1. Applies 0-5 V between AIN1 - ACOM.
18	AIN2	Analogue input for brightness adjustment for LAMP2. Applies 0-5 V between AIN2 - ACOM.
19	5V	5V output for voltage reference output to connect external potentiometer for analog input. Please don't use this output for other purpose.
20	ACOM	Common terminal for AIN1/2 (analogue input)



AC Power input		
1	L	Input terminal of 100-240 VAC
2	PE	Protective earth terminal, connected to the chassis. Make sure to ground the terminal.
3	N	Input terminal of 100-240 VAC



6. External control signal timing



* When switching LAMP by A0, previous value will be kept at LAMP number before switching. ①
 When using only LAMP1, the value of D0-7 will be effective without A0/HOLD input.
 When making HOLD as "ON", LAMP output won't change even D0-7 and A0 are being changed.
 Please confirm all signals are stable more than 2.5ms before setting value of parameters. ①②③

Optional Cables	
Extension cable for 12 V PWM	OP-CB1-2 (-3,-5)
Extension cable for CONSTANT CURRENT	OP-CBCH1-2 (-3,-5)
External lighting control cable	OP-ECB2-2 (-3,-5)
External brightness control cable*	OP-ECBM20-3

* Analogue input is susceptible to noise compared to digital input.
Take sufficient measures against noise around the device or prepare shield cables by yourself.

7. Behavior of READY indicator

List of Lighting Behavior	
Power OFF	OFF
When LAMP is ON(including output level 0-0)	ON
Overcurrent detection	When an overcurrent is detected,the indicator is OFF and then restored after 2 seconds. While the overcurrent continues to flow, the indicator blinks in the above cycle.


China RoHS compliant
 Refer following homepage about "Commitment to China RoHS".
http://www.optex-fa.com/rohs_cn/



Head Office: 91 Chudoji-Awata-cho Shimogyo-ku Kyoto 600-8815 JAPAN
TEL. +81-(0)75-325-2920 FAX. +81-(0)75-325-2921
Homepage: <http://www.optex-fa.com>

The OPPCW series do not contain any parts that fall under the category of strategic items.